CLAIMS

What is claimed is:

1. A connector for attachment to a tubular conduit, having a generally tubular metallic body comprised of:

a first end portion;

a second end portion, adjoining said first end portion, having a smooth cylindrical outer surface adapted to be inserted into said conduit, said second end portion including a formed rounded rolled-over nose at the outer end thereof;

a longitudinally directed internal passage extending through said tubular body for receiving fluid flow;

a first annular groove formed in said second end portion;

a second annular groove, axially spaced from said first annular groove, also formed in said second end portion;

said second end portion including a decreasing outside diameter portion extending slopingly from said second annular groove to the outer end thereof;

a first essentially constant diameter portion extending between said first annular groove and said second annular groove; and

a second essentially constant diameter portion extending between said first annular groove and said first end portion.

2. The connector as in claim 1 wherein said first and second annular grooves are roll formed via a radial impingement process.

3. The connector as in claim 1 wherein each of said first and second annular grooves is adapted to receive an annular sealing/retention member which has a greater outside diameter than that of said tubular body second end, said sealing/retention member, being

adapted to sealingly engage the inner peripheral surface of said tubular conduit, and completely fill said annular grooves while in compression.

4. The connector as in claim 1 wherein said generally tubular body includes an annular peripheral retaining groove located at the junction of said first and second end portions, said retaining groove being formed in said junction and adapted for receiving an annular end portion of a generally cylindrical shell surrounding and radially spaced from the outer surface of said second end of said tubular body, said shell also having an open end for receiving an end of said conduit, with said shell annular end portion affixedly terminating within said retaining groove, said shell being adapted to be inwardly deformed, once said conduit end is received therein, such that a plurality of axially spaced radially inwardly-depending detents are formed therein for elastically deforming said conduit end.

5. The connector as in claim 4 wherein said plurality of axially spaced detents are comprised of a first detent radially positioned over said decreasing outside diameter portion, a second detent radially positioned between said first and said second groove and a third detent radially positioned between said first annular groove and said retaining groove.

6. The connector as in claim 4 wherein said detents extend along the circumference of said shell.

7. The connector as in claim 1 wherein said generally tubular body is fabricated from a 5000 series aluminum alloy.

8. A connector for attachment to an elastic tubular conduit, having a generally tubular metallic body comprised of:

a first portion,

a second portion integral with said first portion and having a smooth cylindrical outer surface adapted to be inserted into said conduit,

a longitudinally directed passage extending longitudinally through said first and said second portions for receiving fluid flow therethrough,

at least one annular, outwardly-directed groove formed in said second portion; and

an essentially constant diameter portion in said second portion adjoining at least one side of said at least one annular groove.

9. The connector as in claim 8 wherein said second portion includes an outer end portion having a formed, rounded nose.

10. The connector as in claim 9 wherein said second portion includes a uniformly decreasing outside diameter portion extending from the most proximate one of said at least one annular groove to said outer end-portion.

11. The connector as in claim 8 wherein said at least one annular groove is produced via roll-forming process.

12. The connector as in claim 8 wherein said at least one annular groove is a rounded groove and adapted to receive a ring-dashed shaped sealing/retention member which has a greater outer diameter than that of said tubular body second portion while located within said at least one annular groove and engages the inner peripheral surface of said tubular conduit when said conduit is subject to radial compression.

13. The connector as in claim 12 wherein said sealing/retention member takes the form of an O-ring having a relaxed or uninstalled inner diameter less than the minimum diameter of the bottom surface of said at least one rounded annular groove.

14. The connector as in claim 8 wherein said generally tubular body has an annular peripheral retaining groove formed between said first and second portions and is adapted for receiving a generally cylindrical shell surrounding and radially spaced from the outer surface of said second end of said tubular body, said shell having an open end for receiving said elastic tubular conduit and a closed annular end affixedly terminating within said retaining groove.

15. The connector as in claim 8 wherein said generally tubular metallic body is fabricated from a 5000 series aluminum alloy.

16. The connector as in claim 8 wherein said at least one annular outwardly-directed groove is curvelinear and includes side portions having a first curvelinear shape and a bottom portion having a curvelinear shape differing from that of said side portions, with the intersections of said side and bottom portions defining substantially similar longitudinally-spaced circular transition lines that function to aid in the retention of a sealing/retention member located within said at least one annular groove.